0	0	0	Ņ	12	10	4	10	_	4	O	20	0	တ	2	2	_	0	_	0	0	_	2	0	22	9	29	0	ω	10	٦.
S32 and (leakage with (reduce or reduction or reducing or minimize or minimized or m US-PG	S32 and (leakage with sinker)	S32 and (minority with (reduce or reduction or reducing or minimize or minimized or m US-PG	S42 and (leakage with ("between" adj diode))	S46 and (("257"/\$3.cor.) or ("438"/\$3.cor.))	S47 not S45	5408122	5430321	20040222482	("4904861" "4998013" "5408122" "5430321").pn.	(257/443.ccls.) and (corner with diode)	(257/443.ccls.) and (current with (gnd or ground))	(257/443.ccls.) and (leakage with (gnd or ground))	(257/443.ccls.) and suction	S10 and (suction adj diode)	S10 and (up near2 diffusion)	S13 and ((annular or concentric or circular) with current)	S13 and ((diffusion) with time)	S13 and ((edge or corner) with time)	S13 and (corner with (gnd or ground))	S13 and (corner with current)	S13 and (corner with diode)	S13 and (ring with current)	S13 and (sinker)	S13 and ring	S25 and ((diffusion) with time)	S25 and (current with time)	S25 and (sinker)	S27 not S23	S30 and S25	S4 and suction ·
m US-PGPUB; USPAT	US-PGPUB; USPAT	rmUS-PGPUB; USPAT	US-PGPUB; USPAT	US-PGPUB; USPAT	US-PGPUB; USPAT	US-PGPUB; USPAT	US-PGPUB; USPAT	US-PGPUB; USPAT	US-PGPUB; USPAT	US-PGPUB; USPAT	US-PGPUB; USPAT	US-PGPUB; USPAT	US-PGPUB; USPAT	US-PGPUB; USPAT	US-PGPUB; USPAT	US-PGPUB; USPAT	US-PGPUB; USPAT	US-PGPUB; USPAT	US-PGPUB; USPAT	US-PGPUB; USPAT	US-PGPUB; USPAT	US-PGPUB; USPAT	US-PGPUB; USPAT	US-PGPUB; USPAT	US-PGPUB; USPAT	US-PGPUB; USPAT	US-PGPUB; USPAT	US-PGPUB; USPAT	US-PGPUB; USPAT	US-PGPUB; USPAT
2/24/05	2/24/05	2/24/05	2/24/05	2/24/05	2/24/05	2/23/05	2/23/05	2/23/05	2/23/05	2/23/05	2/23/05	2/23/05	2/23/05	2/23/05	2/23/05	2/23/05	2/23/05	2/23/05	2/23/05	2/23/05	2/23/05	2/23/05	2/23/05	2/23/05	2/23/05	2/23/05	2/23/05	2/23/05	2/23/05	2/23/05

2/27/05	(dummy with (cross\$1talk or (cross adj talk)) with (photo\$1diode or (photo adj diode))) US-PGPUB; USPAT	→ 5
	and S64	6 0
	S105 not S104 US-PGPUB; USPAT	_
	S105 not55 US-PGPUB; USPAT	4
	S108 not S104 US-PGPUB; USPAT	2
	S32 and (minority with (reduce or reduction or reducing or minimize or minimized or m US-PGPUB; USPAT	25
	S55 and (@ad<"20040311" or @rlad<"20040311")	3
	S61 not S60 US-PGPUB; USPAT	0
	S64 and (((reduce or reduced or reduction or reducing or minimize or minimized or mir US-PGPUB; USPAT	
	S64 and ((diode adj (reduce or reduced or reduction or reducing or minimize or minimi; US-PGPUB; USPAT	ω
	S64 and ((diode adj (reduce or reduced or reduction or reducing or minimize or minimi: US-PGPUB; USPAT	ယ
	S64 and ((diode adj (reduce or reduced or reduction or reducing or minimize or minimi: US-PGPUB; USPAT	ယ
	S69 not S67 US-PGPUB; USPAT	0
	S73 and (cross\$1talk or (cross adj talk) or noise)	9
	S75 not S72 US-PGPUB; USPAT	13
	S78 not S79 US-PGPUB; USPAT	15
	S84 and ((cross\$1talk or (cross adj talk) or noise) with (photo\$1diode or (photo adj dio US-PGPUB; USPAT	0
	S88 and (substrate.clm.)	28
	S88 and (substrate.clm.) US-PGPUB; USPAT	28
	S91 and (substrate.clm.) US-PGPUB; USPAT	10
	S95 and (@py="2004") and (substrate.clm.)	თ
	S95 and (substrate.clm.) USPAT	87
	((front\$1side or front) with (illuminate or illumination or illuminating or illuminated)) and US-PGPUB; USPAT	0
	(leakage with ("between" adj diode)) US-PGPUB; USPAT	32
	(minority with ("between" adj diode)) US-PGPUB; USPAT	16
	20040222482 and suction US-PGPUB; USPAT	_
	4031607 "3988762" US-PGPUB; USPAT	1 8
	S32 and ((cross\$1talk or (cross adj talk)) with diode)	7
	S32 and (leakage with (reduce or reduction or reducing or minimize or minimized or m US-PGPUB; USPAT	7
	S32 and (leakage with (reduce or reduction or reducing or minimize or minimized or m US-PGPUB; USPAT	_

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5567976
S44 and (("257"/$3.cor.) or ("438"/$3.cor.))
                                            S64 and ((diode adj (reduce or reduced or reduction or reducing or minimize or minimi: US-PGPUB; USPAT
                                                                                             S84 and ( (photo$1diode or (photo adj diode)) )
                                                                                                                                                                                                5602415
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                                                                                                                                                                                                                                                                                                                                                                                          ( ((dark adj current) near3 (reduce or reduction or reducing or minimize or minimized o US-PGPUB; USPAT
                                                                                                                                                                                                                                                                                                                                                                                                                                              ( (array or matrix or surface) with (diode near spread))
                                                                                                                                                                                                                                                                                            ( ((cross$1talk or (cross adj talk)) near3 (array or matrix) ) with diodes)
                                                                                                                                                                                                                                                                                                                                             ( ((dark adj current) near3 (array or matrix) ) with diodes)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ( (cross$1talk or (cross adj talk)) with (array or matrix or surface) with (diodes near spr∈US-PGPUB; USPAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (dummy with (array or matrix) with (photo$1diode or (photo adj diode)) )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (dummy with (cross$1talk or (cross adj talk) or noise) ) and ((image$1sensor or image{US-PGPUB; USPAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (dummy with (cross$1talk or (cross adj talk) or noise) ) and ((photo$1diode or (photo aːUS-PGPUB; USPAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (dummy with (cross$1talk or (cross adj talk) or noise) ) and (257/431.ccls.)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (dummy with (cross$1talk or (cross adj talk) or noise) ) and (257/444.ccls.)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (dummy with (cross$1talk or (cross adj talk) or noise) ) and (257/447.ccls.)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             dummy with (cross$1talk or (cross adj talk) or noise) ) and (light.ab.) and (("257"/$3.cc US-PGPUB; USPAT)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (dummy with (cross$1talk or (cross adj talk) or noise) ) and S78
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ( (cross$1talk or (cross adj talk)) with diode with interval)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ("3978343" | "5812030" | "5828178" | "5952883" | "6201235" | "6246284").PN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ((front$1side or front) ) and S49 and (@ad<"20040311" or @rlad<"20040311")
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (cross$1talk or (cross adj talk) or noise) near "between") and (257/443.ccls.)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              cross$1talk or (cross adj talk) or noise) near3 ("between" adj (photo$1diode or (photدUS-PGPUB; USPAT (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (cross$1talk or (cross adj talk)) with (array or matrix or surface) with (diode near spre:US-PGPUB; USPAT
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (cross$1talk or (cross adj talk)) with (diode or (photo adj diode)) with (corner or middll US-PGPUB; USPAT
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (cross$1talk or (cross adj talk)) with (photo$1diode or (photo adj diode)) with addition; US-PGPUB; USPAT
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                                                                                             US-PGPUB; USPAT
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  US-PGPUB; USPAT
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\$152 and ((photo\$1diode or (photo adj diode))) \$158 and ((photo\$1diode or (photo adj diode))) \$128 and ((photo\$1detector or (photo adj detector)) \$128 and ((photo\$1detector or (photo adj detector)) \$129 and ((photo\$1diode or (photo adj diode))) \$131 and (@ad<"20040311" or @rlad<"20040311") \$113 and (@ad<"20040311" or @rlad<"20040311") \$113 and (@ad<"20040311" or @rlad<"20040311") \$113 and (@ad<"20040311" or @rlad<"20040311") \$114 and ((photo\$1dode or (fish adj bone))) \$115 and ((photo\$1dode or (fish adj bone))) \$116 and ((photo\$1dode or (fish adj bone))) \$117 and \$126 \$110 and ((photo\$1dode or (fish adj bone))) \$111 and ((photo\$1dode or (fish adj bone))) \$112 and \$126 \$110 and ((photo\$1dode or (fish adj bone))) \$113 and ((photo\$1dode or (fish adj bone))) \$114 and ((photo\$1dode or (fish adj bone))) \$115 and ((photo\$1dode or (fish adj bone))) \$115 and ((photo\$1dode or (fish adj bone))) \$117 and \$126 \$110 and ((photo\$1dode or (fish adj bone))) \$111 and ((photo\$1dode or (photo dode))) \$111 and ((photo\$1dode)) and \$134 \$112 and ((photo\$1dode)) and ((photo)) and ((photo)) with ((photo)) and (photo) with sidewall) and ((photo)) and (photo) and (phot	\$154 not \$153 S152 and ((photo\$1diode or (photo adj diode))) \$152 and ((photo\$1diode or (photo adj diode))) \$153 not \$135 S128 and ((photo\$1diode or (photo adj dietector))) \$128 and ((photo\$1detector or (photo adj dietector))) \$129 and ((photo\$1detector or (photo adj dietector))) \$139 and ((photo\$1dode or (photo adj dietector))) \$139 and ((photo\$1dode or (photo adj dietector))) \$139 and ((photo\$1dode or (photo adj dietector))) \$131 and ((padd<"20040311" or (photo adj dietector))) \$131 and ((padd<"20040311" or (padd<"20040311")) \$140 and ((padd<"20040311" or (padd<"20040311")) \$151 and ((padd<"20040311" or (padd<"20040311")) \$152 and ((padd<"20040311" or (padd<"20040311")) \$153 and ((padd<"20040311" or (padd<"20040311")) \$154 and ((padd<"20040311" or (padd<"20040311")) \$155 and ((padd<"20040311" or (padd<"20040311")) \$150 and ((padd<"20040311") \$150 and ((padd<"20040311")) \$150 and ((padd<"20040311")) \$150 and ((padd<"20040311") \$150 and ((padd<"20040311") \$150 and ((padd<"20040311") \$150 and ((padd<"20040311")) \$150 and ((padd<"20040311") \$150 and ((padd) ((p
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S186 and cathode and anode	S187 not S185	S189 not S185	S195 and schottky	S198 and (solar.ab.)	S198 and schottky	S204 not S199	S205 and ((front\$1side or ((front or top) adj (surface or side)) or top\$surface or top\$1s US-PGPUB; USPAT	S210 and ((front\$1side or ((front or top) adj (surface or side)) or top\$surface or top\$1s US-PGPUB; USPAT	S217 not S215	S222 and (ring with (anode or cathode) not (guard or guarding))	S222 and schottky	S226 and ((front\$1side or ((front or top)) adj (surface or side)) or top\$surface or top\$1sUS-PGPUB; USPAT	S226 and ((front\$1side or ((front or top)) adj (surface or side)) or top\$surface or top\$1sUS-PGPUB; USPAT	S231 and ((photo\$1detector or ((photo or light or image or radiation) adj (detector or d US-PGPUB; USPAT	S231 and (("250"/\$3.ccls.) or ("257"/\$3.ccls.) or ("438"/\$3.ccls.))	S231 and schottky	S234 not S233	S238 and ((circular or annular or concentric) with (anode or cathode) not (guard or gua US-PGPUB; USPAT	S246 and ((through\$1hole or (through adj hole)) with (chip or wafer or substrate))	S248 not S247	S250 and ((back\$1side or (back adj side)) with (mask or masked or masking or resist o US-PGPUB; USPAT	S253 not S252	S256 not S252	S264 and (("257"/\$3.ccls.) or ("438"/\$3.ccls.))	S268 not S252	S270 not S252	S273 not S272	S275 not (S273 or S272)	S277 not (S275 or S273 or S272)	738847	
US-PGPUB; USPAT	US-PGPUB; USPAT	US-PGPUB; USPAT	US-PGPUB; USPAT	US-PGPUB; USPAT	US-PGPUB; USPAT	US-PGPUB; USPAT	1s US-PGPUB; USPAT	1sUS-PGPUB; USPAT	US-PGPUB; USPAT	US-PGPUB; USPAT	US-PGPUB; USPAT	1sUS-PGPUB; USPAT	1sUS-PGPUB; USPAT	dUS-PGPUB; USPAT	US-PGPUB; USPAT	US-PGPUB; USPAT	US-PGPUB; USPAT	ıa US-PGPUB; USPAT	US-PGPUB; USPAT	US-PGPUB; USPAT	OUS-PGPUB; USPAT	US-PGPUB; USPAT	US-PGPUB; USPAT	US-PGPUB; USPAT	US-PGPUB; USPAT	US-PGPUB; USPAT	US-PGPUB; USPAT	US-PGPUB; USPAT	US-PGPUB; USPAT	DERWENT	
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((back\$1side or (back adj side)) with anode with cathode) and ((front\$1side or ((front oUS-PGPUB; USPAT ((back\$1side or (back adj side)) with anode with cathode) and ((front\$1side or ((front oUS-PGPUB; USPAT	((back\$1side or (back adj side)) with anode with cathode) and (@ad<"20040311" or @US-PGPUB; USPAT	((back\$1side or (back adj side)) with anode with cathode) and (solar.ab.)	((back\$1side or back) with anode with cathode) and S183	((front\$1side or ((front or top) adj (surface or side)) or top\$surface or top\$1side or fron US-PGPUB; USPAT	((front\$1side or ((front or top) adj (surface or side)) or top\$surface or top\$1side or fron US-PGPUB; USPAT	((front\$1side or ((front or top) adj (surface or side)) or top\$surface or top\$1side or fron US-PGPUB; USPAT	((front\$1side or front or top or top\$1side) with ("p+" or "p.sup.+")) and (@ad<"2004031US-PGPUB; USPAT	((front\$1side or front or top or top\$1side) with ("p+" or "p.sup.+")) and S180	((hole or through\$1hole or via\$1hole) with (anode or cathode) not electron) and S255 US-PGPUB; USPAT	((hole) near (doped or doping or dopant or impurity or dope)) and (@ad<"20040311" o US-PGPUB; USPAT	((hole) with (doped or doping or dopant or impurity or dope) with side) and (@ad<"2004 US-PGPUB; USPAT	((through\$1hole) near (doped or doping or dopant or impurity or dope)) and (@ad<"20 US-PGPUB; USPAT	((through\$1hole) near (doped or doping or dopant or impurity or dope)) and (@ad<"20 US-PGPUB; USPAT	((through\$1hole) near2 (doped or doping or dopant or impurity or dope)) and (@ad<"2 US-PGPUB; USPAT	((through\$1hole) near2 (doped or doping or dopant or impurity or dope)) and (@ad<"2 US-PGPUB; USPAT	((through\$1hole) near3 (doped or doping or dopant or impurity or dope)) and (@ad<"2 US-PGPUB; USPAT	((through\$1hole) with (doped or doping or dopant or impurity or dope)) and (@ad<"20(US-PGPUB; USPAT	20040222482 and (cathode or anode or electrode)	20040222482 and (mask)	5494833 "5541438"	S152 and ((photo\$1detector or (photo adj detector)))	S166 not S165	S168 and (photo\$1detector or ((photo or light or image or radiation) adj (detector or di US-PGPUB; USPAT	S170 and (photo\$1detector or ((photo or light or image or radiation) adj (detector or di US-PGPUB; USPAT	S173 and schottky	S173 not S169	S176 and (photo\$1detector or ((photo or light or image or radiation) adj (detector or di US-PGPUB; USPAT	S184 and cathode and anode	S185 and cathode and anode
r ((front oUS-PGPUB; USPAT r ((front oUS-PGPUB; USPAT	11" or @US-PGPUB; USPAT	US-PGPUB; USPAT	US-PGPUB; USPAT	le or fron US-PGPUB; USPAT	le or fron US-PGPUB; USPAT	le or fron US-PGPUB; USPAT	"2004031US-PGPUB; USPAT	US-PGPUB; USPAT	IND S255 US-PGPUB; USPAT	40311" o US-PGPUB; USPAT	ad<"200º US-PGPUB; USPAT	@ad<"20 US-PGPUB; USPAT	@ad<"20 US-PGPUB; USPAT	(@ad<"2US-PGPUB; USPAT	(@ad<"2US-PGPUB; USPAT	(@ad<"2US-PGPUB; USPAT	∄ad<"20≀US-PGPUB; USPAT	US-PGPUB; USPAT	US-PGPUB; USPAT	US-PGPUB; USPAT	US-PGPUB; USPAT	US-PGPUB; USPAT	ctor or di US-PGPUB; USPAT	ctor or di US-PGPUB; USPAT	US-PGPUB; USPAT	US-PGPUB; USPAT	ctor or di US-PGPUB; USPAT	US-PGPUB; USPAT	US-PGPUB; USPAT
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6111299 "5831322" "5757057"
                                                                                              ((array or matrix) with (photo$1detector or ((photo or light or image or radiation) adj (d US-PGPUB; USPAT
                                                                                                                                                 ((array or matrix) with wafer with (photo$1detector or ((photo or light or image or radia US-PGPUB; USPAT
                                                                                                                                                                                                                                                                                                                                                                                                           S210 and ((front$1side or ((front or top)) adj (surface or side)) or top$surface or top$1s US-PGPUB; USPAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         S279 not S280
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         S284 not S283
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  S288 and ((front$1side or ((front or top)) adj (surface or side)) or top$surface or top$1sUS-PGPUB; USPAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   S288 and ((through$1hole or (through adj hole)) with (anode or cathode) )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       S288 and (ring with (cathode or anode) not (guard or guarding))
((array or matrix) with ( photo$1detector or ((photo or light or image or radiation) adj (d US-PGPUB; USPAT
                                                ((array or matrix) with ( photo$1detector or ((photo or light or image or radiation) adj (d US-PGPUB; USPAT
                                                                                                                                                                                                    (pin with ( photo$1detector or ((photo or light or image or radiation) adj (detector or dio US-PGPUB; USPAT
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        S288 and ((undoped or intrinsic) with (anode or cathode) )
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         S288 and ((undoped or intrinsic) with (hole))
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          S288 and (through$1hole or (through adj hole)
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                                                                                                                                                                                                                                                                                                     (pin with ( photo$1detector or ((photo or light or image or radiation) adj (detector or dio US-PGPUB; USPAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ( (photo$1detector or ((photo or light or image or radiation) adj (detector or diode or sei US-PGPUB; USPAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ( (photo$1detector or ((photo or light or image or radiation) adj (detector or diode or seːUS-PGPUB; USPAT
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ((257/458,656.ccls.)) and ((back$1side or (back adj side)) with ("p+" or "p.sup.+")) and US-PGPUB; USPAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ((257/458,656.ccls.)) and ((back$1side or (back adj side)) with (mask or masked or ma US-PGPUB; USPAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ((back$1side or (back adj side)) with (anode or cathode ) ) and ((257/458,656.ccls.))
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S362 and ((back\$1side or (back adj side) or bottom) with (substrate or wafer or chip o ₁ US-PGPUB; USPAT S359 not (S352 or S339 or S333 or S318 or S311 or S306 or S301) US-PGPUB; USPAT	and (((back\$1side or (back adj side) or bottom) with (substrate or wafer or chip c US-PG and ((back\$1side or (back adj side) or bottom) with (substrate or wafer or chip o US-PG	US-PG		\$386 not (\$379 or \$359 or \$339 or \$339 or \$333 or \$318 or \$311 or \$306 or \$301) US-PGPUB; USPAT	S387 and (@ad<"20040311" or @rlad<"20040311") บร-PGPบB; บรPAT	S388 not S385 US-PGPUB; USPAT	S391 and (@ad<"20040311" or @rlad<"20040311")	S392 not (S386 or S385 or S379 or S359 or S352 or S339 or S333 or S318 or S311 or US-PGPUB; USPAT	S396 not (S392 or S386 or S385 or S379 or S359 or S352 or S339 or S333 or S318 or US-PGPUB; USPAT	S405 and ((back\$1side or (back adj side) or bottom or back) with (substrate or wafer o US-PGPUB; USPAT	S405 and ((back\$1side or (back adj side) or bottom) with (substrate or wafer or chip or US-PGPUB; USPAT	S405 and S390 US-PGPUB; USPAT	S410 and ((back\$1side or (back adj side) or bottom or back) with (substrate or wafer o US-PGPUB; USPAT	S410 and ((back\$1side or (back adj side) or bottom) with (substrate or wafer or chip or US-PGPUB; USPAT	S410 and (257/291.ccls.) US-PGPUB; USPAT	S410 and (257/458.ccls.) US-PGPUB; USPAT	S413 not (S396 or S392 or S386 or S385 or S379 or S359 or S352 or S339 or S333 or US-PGPUB; USPAT	S414 and (@ad<"20040311" or @rlad<"20040311") US-PGPUB; USPAT	S416 and (257/291.ccls.) US-PGPUB; USPAT	S416 and (257/458.ccls.) US-PGPUB; USPAT	S416 and S410 US-PGPUB; USPAT	S418 and (@ad<"20040311" or @rlad<"20040311") US-PGPUB; USPAT	S419 not (S413 or S396 or S392 or S386 or S385 or S379 or S359 or S352 or S339 or US-PGPUB; USPAT	S422 not (S413 or S396 or S392 or S386 or S385 or S379 or S359 or S352 or S339 or US-PGPUB; USPAT	S423 and (substrate or wafer or chip or die).clm.	udt.as. US-PGPUB; USPAT	
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                                                                                                                                   S308 and (( (back$1side or (back adj side) or bottom) near (substrate or wafer or chip (US-PGPUB; USPAT
                                                                                                                                                                                   S308 and (( (back$1side or (back adj side) or bottom) near2 (substrate or wafer or chipUS-PGPUB; USPAT
                                                                                                                                                                                                                            S310 and ((back$1side or (back adj side)) with (doped or doping or dopant or impurity -US-PGPUB; USPAT
                                                                                                                                                                                                                                                                               S311 not (S306 or S301)
                                                                                                                                                                                                                                                                                                                    S313 and ( ( photo$1detector or ((photo or light or image or radiation) adj (detector or ‹US-PGPUB; USPAT
                                                                                                                                                                                                                                                                                                                                                                                                                S313 and ((back$1side or (back adj side)) with (doped or doping or dopant or impurity .US-PGPUB; USPAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                              S314 and ((back$1side or (back adj side)) with (doped or doping or dopant or impurity - US-PGPUB; USPA1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              S333 not (S318 or S311 or S306 or S301)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         S334 and (@ad<"20040311" or @rlad<"20040311")
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   S338 and (( (back$1side or (back adj side) or bottom) with (substrate or wafer or chip cUS-PGPUB; USPAT
                                           S305 and ((back$1side or (back adj side)) with (doped or doping or dopant or impurity -US-PGPUB; USPAT
                                                                                                                                                                                                                                                                                                                                                                  S313 and (( (back$1side or (back adj side) or bottom) near substrate) with (doped or dcUS-PGPUB; USPAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              S318 not (S311 or S306 or S301)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        S320 and (( (back$1side or (back adj side) or bottom) near (substrate or wafer or chip ،US-PGPUB; USPAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    S325 and (( (back$1side or (back adj side) or bottom) with (substrate or wafer or chip cUS-PGPUB; USPAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      S328 not S326
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             $331 and (@ad<"20040311" or @rlad<"20040311")
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     S339 not (S333 or S318 or S311 or S306 or S301)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         S343 and (( (back$1side or (back adj side) or bottom) with (substrate or wafer or chip cUS-PGPUB; USPAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    S346 and (@ad<"20040311" or @rlad<"20040311")
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  S348 and (@ad<"20040311" or @rlad<"20040311")
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            S350 and (( (back$1side or (back adj side) or bottom) with (substrate or wafer or chip cUS-PGPUB; USPAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          S351 and (@ad<"20040311" or @rlad<"20040311")
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    S357 and ( (back$1side or (back adj side) or bottom) with (substrate or wafer or chip or US-PGPUB; USPAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                S358 and (@ad<"20040311" or @rlad<"20040311")
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          S342 and ((front$1side or ((front or top ) adj (surface or side)) or top$surface or top$1sUS-PGPUB; USPAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           S343 and (( (back$1side or (back adj side) or bottom) near2 (substrate or wafer or chipUS-PGPUB; USPAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          S352 not (S339 or S333 or S318 or S311 or S306 or S301)
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                                                                                                                                                                                                                                                                           US-PGPUB; USPAT
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( photo$1detector or ((photo or light or image or radiation) adj (detector or diode or sen US-PGPUB; USPAT
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    257/443.ccls. and (( (back$1side or (back adj side) or bottom) with (substrate or wafer IUS-PGPUB; USPAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 5981988 and (@ad<"20040311" or @rlad<"20040311")
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          S246 and ((ring or circular or annular or concentric) with (anode or cathode) not (guard US-PGPUB; USPAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   S297 and ((back$1side or (back adj side)) with (doped or doping or dopant or impurity - US-PGPUB; USPA1
                                                                                                                                                                                                                                                                                      ("20030054585" | "5067985" | "6066510").PN.
                                                                                                                                                                                                                                                                                                                                    ("20040222482" "20040222358" "6340831" "6043550").did. and ((back$1side or (back.US-PGPUB; USPAT
                                                                                                                                                                                                                                                                                                                                                                                                  ("4327475" | "4482907" | "4617586" | "5029321" | "5055900" | "5400210" | "5495395").FUS-PGPUB; USPAT; USOc 3/5/05
                                                                                                                                                                                                                                                                                                                                                                                                                                                              ("4760273" | "4878102" | "5029321" | "5555520").PN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ((back$1side or (back adj side) or bottom) with ("p+" or "p.sup.+" ) ) and (257/458.ccls, US-PGPUB; USPAT
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                                                      ( photo$1detector or ((photo or light or image or radiation) adj (detector or diode or senUS-PGPUB; USPAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ((back$1side or (back adj side) or bottom) with ("p+" or "p.sup.+")) and (( back$1side o US-PGPUB; USPAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ((back$1side or (back adj side)) with (contact or electrode or bump or pad or anode or ،US-PGPUB; USPAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ((back$1side or (back adj side)) with anode with cathode ) and ((front$1side or ((front oUS-PGPUB; USPAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (257/414.ccls.) and ( (back$1side or (back adj side) or bottom) with (substrate or wafer US-PGPUB; USPAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (257/431.ccls.) and ( (back$1side or (back adj side) or bottom) with (substrate or wafer US-PGPUB; USPA1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (257/458,459.ccls.) and ( (back$1side or (back adj side) or bottom) with (substrate or w US-PGPUB; USPAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (257/463.ccls.) and ( (back$1side or (back adj side) or bottom) with (substrate or wafer US-PGPUB; USPAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (electrode with (hole) not electron) and (257/458.ccls.)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (electrode with (through$1hole or (through adj hole)) ) and (257/458.ccls.)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   11017589 "06045576" "2001119010" "10282243" "10012851" "2001078099"
                                                                                                            photo$1detector or ((photo or light or image or radiation) adj (detector or diode or sen US-PGPUB; USPAT
                                                                                                                                                                  pin with wafer with (photo$1detector or ((photo or light or image or radiation) adj (det US-PGPUB; USPAT
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   S441 and ((front$1illuminated or front$1illumination or front$1illuminate or top$1illumir US-PGPUB; USPAT
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                                                                                     ((back$1side or (back adj side) or bottom) with ("n+" or "n.sup.+" or n$1type or (n adj t;US-PGPUB; USPAT
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           S534 not S532
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       S472 not S470
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  S480 and (@ad<"20040311" or @rlad<"20040311")
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             S482 not S478
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  S483 and (@ad<"20040311" or @rlad<"20040311")
                                          S501 not S499
                                                                                                                                                              S511 not (S505 or S504)
                                                                                                                                                                                                   S514 and (photo$1detector or ((photo or light or image or radiation) adj (detector or di US-PGPUB; USPAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        S531 and (photo$1detector or ((photo or light or image or radiation) adj (detector or di US-PGPUB; USPAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          S543 and (("257"/$3.ccls.) or ("438"/$3.ccls.))
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      4618380 "4472728"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          5889313 and (@ad<"20040311" or @rlad<"20040311")
                                                                                                                      S506 and (("257"/$3.ccls.) or ("438"/$3.ccls.))
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                S540 and ( photo$1detector or ((photo or light or image or radiation) adj (detector or di US-PGPUB; USPAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ("4079405" | "4616247" | "4857980" | "5040039" | "5252851" | "5315148" | "5418396" | •US-PGPUB; USPAT; USO(3/11/05
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ("4472728" | "4618380" | "5027182" | "5332903" | "5448082" | "5466954" | "5552596").FUS-PGPUB; USPAT; USO(3/11/05
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ((back$1side or (back adj side) or bottom) with ("p+" or "p.sup.+" or p$1type or (p adj tֻ∙US-PGPUB; USPAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ((back$1side or (back adj side) or bottom) with (mask or masked or masking) with (impUS-PGPUB; USPAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ((back$1side or (back adj side) or bottom) with (mask or masked or masking) with (impUS-PGPUB; USPAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ((both) with (mask or masked or masking) with (impurity or doped or dopant or doping ،US-PGPUB; USPAT
                                    US-PGPUB; USPAT
                                                                             US-PGPUB; USPAT
                                                                                                                   US-PGPUB; USPAT
                                                                                                                                                                                                                                                                                                                         US-PGPUB; USPAT
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                                                                                                                                                          US-PGPUB; USPAT
                                                                                                                                                                                                                                                                                                                                                                  US-PGPUB; USPAT
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     US-PGPUB; USPAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    US-PGPUB; USPAT
JS-PGPUB; USPAT
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GPUB; USPAT; USO(3/14/05	B; USPAT; L	US-PGPU		5021854	28
3/14/05	GPUB; USPAT	US-PGPU		5929499	2
3/14/05	GPUB; USPAT	US-PGPU		6510195	4
3/14/05	GPUB; USPAT	US-PGPU		("6002163" "5888884").pn.	2
3/14/05	GPUB; USPAT	I" or @US-PGPU	spectrometer.ab.) and (("257"/\$3.cor.) or ("438"/\$3.cor.)) and (@ad<"20040311" or @US-Po	(spectrometer.ab.) and (("257"/\$3.cc	39
3/14/05	B; USPAT	ctor or US-PGPU	wafer with (photo\$1detector or ((photo or light or image or radiation) adj (detector or US-PGPUB; USPAT	(wafer with (photo\$1detector or ((ph	44
3/14/05	GPUB; USPAT	10311")'US-PGPU	wafer with photo\$1diode with package) and (@ad<"20040311" or @rlad<"20040311", US-Po	(wafer with photo\$1diode with packa	œ
GPUB; USPAT; USO(3/14/05	Β; USPAT; ι	US-P	("20020011639" "4638165" "5477075" "5592523" "5801430" "6025585").PN.	("20020011639" "4638165" "54770	თ
JSOC 3/14/05	ιΒ; USPAT; ι	042" 'US-PGPU	("4783695" "4835704" "4836435" "4878991" "4897153" "4930216" "4933042" 'US-PGPUB; USPAT; USO(3/14/05	("4783695" "4835704" "4836435"	26
ISO (3/14/05	B; USPAT; ι	042" 'US-PGPU	("4783695" "4835704" "4836435" "4878991" "4897153" "4930216" "4933042" 'US-PGPUB; USPAT; USO(3/14/05	("4783695" "4835704" "4836435"	23
GPUB; USPAT; USO(3/14/05	B; USPAT; ι	US-PGPU		("4903103" "4914301").PN.	2
GPUB; USPAT; USO(3/14/05	Β; USPAT; ι	US-PGPU	"6025585" "6172370").PN.	("5021854" "5757057" "5773829" "6025585" "6172370").PN.	5
3/14/05	GPUB; USPAT	US-PGPU		("6510195" "6426991").pn.	N
3/14/05	B; USPAT	th (impUS-PGPU	((back\$1side or (back adj side) or bottom) with (mask or masked or masking) with (impUS-PGPUB; USPAT	((back\$1side or (back adj side) or bo	ယ
3/14/05	IB; USPAT	th (imp US-PGPU	((back\$1side or (back adj side) or bottom) with (mask or masked or masking) with (impUS-PGPUB; USPAT	((back\$1side or (back adj side) or bo	25
3/14/05	IB; USPAT	o)) anc US-PGPU	((back\$1side or (back adj side)) with (contact or electrode or pad or ball or bump)) anc US-PGPUB; USPAT	((back\$1side or (back adj side)) with	27
3/14/05	GPUB; USPAT	o)) anc US-PGPU	((back\$1side or (back adj side)) with (contact or electrode or pad or ball or bump)) anc US-Po	((back\$1side or (back adj side)) with	7
3/14/05	GPUB; USPAT	US-PGPU	((back\$1side or (back adj side)) with (contact or electrode or pad)) and S509	((back\$1side or (back adj side)) with	27
3/14/05	GPUB; USPAT	US-PGPU	(contact or electrode)) and S498	((back\$1side or (back adj side)) with (contact or electrode)) and S498	43
3/14/05	GPUB; USPAT	\$1dete US-PGPU	((back\$1side or (back adj side)) with (front\$1side or (front adj side)) with (photo\$1dete US-Po	((back\$1side or (back adj side)) with	7
3/14/05	GPUB; USPAT	US-PGPU	p\$1type) and S498	((back\$1side or (back adj side)) with p\$1type) and S498	6
3/14/05	GPUB; USPAT	US-PGPU	p\$1type)and S522	((back\$1side or (back adj side)) with p\$1type) and S522	7
3/14/05	GPUB; USPAT	US-PGPU		(peter and bui).in.	1
3/14/05	GPUB; USPAT	US-PGPU	or masking)	20040222482 and (mask or masked or masking)	_